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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/032,090	12/31/2001	Joachim Grabscheid	P21634	5874

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EXAMINER

HUG, ERIC J

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 04/09/2003

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/032,090

Applicant(s)

GRABSCHEID ET AL.

Examiner

Eric Hug

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 and 24-39 is/are rejected.
- 7) ☐ Claim(s) 22 and 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-5, 7-13, 20, 25, 29, and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Rokman (US 5,135,615). Rokman discloses a device for measuring the condition of a paper machine felt and for reconditioning the felt based on the measurements. The device comprises a measuring head 7 which measures the permeability of a press felt 4 as the felt moves around in a closed loop. Measurements are based on an applied vacuum and are indicative of the moisture content within the felt. The device also comprises nozzles 10 for reconditioning the felt. A control unit 6 is provided for operation of the measuring head and for operation of the nozzles. Figures 3a and 3b show how the measuring head and nozzles are integrated. Figure 5 shows representative profiles of applied vacuum and felt measurements. Results obtained by the measuring head can be transferred to a control panel and to the control unit 6 for regulation of the reconditioning nozzles. The condition of the felt can be measured in a single stripe of predetermined width or be measured over the entire width of the felt by transversing at a constant speed (see column 6, lines 10-65). The measuring across the entire width of the felt can also be performed by dividing the width of the felt into smaller predetermined dimensions of width, and then operating the device at one location

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of predetermined width for a given length of time followed by successive measurements at other locations of predetermined width. Conditioning of the felt is performed in zones so that the measured profile flattens out over time and preferably matches the profile of a new felt just put into use.

The features as described above read on the claims as summarized below:

Claims 1-5: The reference teaches selective, zone conditioning of a paper machine felt based on measurements of the cross-direction felt moisture profile.

Claims 7-10: The conditioning is performed by spray nozzles, which may transverse within a zone of predetermined width.

Claims 11-13: The measuring head is a suction device which is zonally controllable and may transverse within a zone of predetermined width.

Claims 20, 25, 29, and 30: Conditioning of the felt is performed in zones based on a measured moisture profile, and controlled so that the measured profile eventually flattens out over time and matches the profile of the felt when first put into use.

2. Claims 1-5, 7-13, 20, 21, 25, 29, and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Blom (US 5,349,845). Blom discloses an apparatus for measuring the condition (permeability) of a paper machine felt and for reconditioning the felt based on the measured condition. A measuring head 1 is positioned against a felt which moves in a closed loop. A vacuum sensor 5, thermometer 6, and microwave radiator (for measuring moisture content) are provided with the measuring head. The measuring head is displaced a predetermined distance in the transverse distance of the felt to determine the condition of the felt over any particular width. If desired, the entire transverse profile

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of felt can be determined (see column 3, lines 50-64). Measured data is transmitted by measuring lines 12, 13, 14 to measuring unit 15 which displays the data and is connected to reconditioning water jets 17. The jets are operated based on the measuring data (see column 5, lines 9 to 62). The felt can be reconditioned by the jets at selected points only where required by the measured data (zonal treatment), thus avoiding unnecessary treatment of the entire felt width. Measured profiles of moisture, temperature, and permeability, are given in Figures 3a-3c to illustrate the condition of a felt across its width after contamination and before treatment. This data is compared to reference data taken before a felt is put into use. The reference profiles are used as target data for reconditioning the felt. The different types of measurements allows for different types of reconditioning.

The features as described above read on the claims as summarized below:

Claims 1-5: The reference teaches selective, zone conditioning of a paper machine felt based on measurements of the cross-direction felt moisture profile, temperature profile, and permeability profile.

Claims 7-10: The conditioning is performed by spray nozzles, which transverse within zones designated for cleaning based on the measurements.

Claims 11-13: The vacuum sensor of the conditioning apparatus transverses within any given distance along the width of the felt.

Claims 20, 21, 25, 29, and 30: Conditioning of the felt is performed in zones based on any of the measured profiles, and can be variably controlled so that either of the measured profiles matches a profile of the felt when first put into use.

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3. Claims 1-5, 7, and 25-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Pikulik et al (US 5,725,737). Pikulik discloses an apparatus for detecting holes and plugged spots in a moving paper machine fabric through measurements of fabric permeability. The apparatus 10 comprises a nozzle 12, a flow meter 14, a sensor or transducer 16, a water pressure regulator 18, a water line 28 for feeding water to the nozzle, and a data processing unit 26 connected to the sensor and flow meter. Water is ejected from the nozzle to determine the permeability of the fabric. The apparatus can be operated to travel back and forth across the entire width of the fabric or any portion thereof. A permeability profile can be determined from measurements along the entire width of the fabric. From measurements of permeability, information about the location of holes and plugs can be used for selective localized cleaning. Cleaning showers are then aimed at those positions only deemed necessary for cleaning based on the measurements. A cleaning unit 136 for performing the selective cleaning is connected to a control unit 138, which is connected to the measuring apparatus 10, 132.

The features as described above read on the claims as summarized below:

Claims 1-5: The reference teaches selective, zone conditioning of a paper machine felt based on measurements of the cross-direction permeability profile.

Claims 7: The conditioning is performed by spray nozzles, which transverse within only those zones designated for cleaning based on the measured permeability profile.

Claims 25-27: Conditioning of the felt is performed in zones with chemical solutions based on the measured profiles.

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4. Claims 1-6, 8, 9, 11-13, 20, 21, and 24-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Haythornthwaite (US 3,859,163). Haythornthwaite discloses a method of cleaning a moving felt in a paper making machine based on sensed vacuum measurements that indicate the moisture content of the felt and the condition of the felt. Variations in the moisture of the felt are detected widthwise by vacuum boxes 12 positioned transversely of the felt. A high pressure shower 15 is activated whenever the vacuum at any point rises above a predetermined level, the rise resulting from clogging or plugging of the felt.

In Figures 3-5, zonal measuring is performed. A moisture meter 30 in conjunction with a meter head 28 and vacuum box 20 measures an amount of water in the felt at a transverse position where the meter is located. The meter head can be moved back and forth across the width of the felt. The output of the meter is indicative of the condition of the felt. The vacuum box is provided with apertures at the surface. The vacuum box is also provided with two apertured sliding members located below the apertured surface. The output of the moisture meter is transmitted to a control system and subsequently the sliding members are moved near a plugged region of the felt in response to the measured moisture. The sliding members are moved so that the apertures of the vacuum box surface and the apertures of the sliding members align within a zone of predetermined width. The measuring head is also moved to this zone to detect the vacuum within the zone. This arrangement is useful whenever the clogging of the felt is uneven across its width and selective cleaning needs to be performed (see column 3, line 47 to column 4, line 8).

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The water shower used for cleaning extends transversely and is divided into a series of sections (see Figure 5). Each section is controlled by a series of control lines and solenoid valves.

Control of the apparatus is based on a desired average moisture profile (see column 5, lines 35-50). Measurements of moisture at any given location are compared to average value, and then the cleaning of that location is adjusted accordingly.

The features as described above read on the claims as summarized below:

Claims 1-6, 31: The reference teaches zone measuring and conditioning of a paper machine felt after it has passed through, whereby the conditioning is controlled based on an average cross-direction profile of moisture/permeability.

Claims 8, 9: The individually controlled shower lines described above reads on these claims.

Claims 11-13: Vacuum is controllable within zones by movement and positioning of the sliding members.

Claims 20, 21, 24-30: These claims are all directed to zonal application of the conditioning medium, which is done by shower system described above. Chemical solutions are among the systems considered by Haythornthwaite for the type of control he discloses.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 14-19 and 32-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haythornthwaite (US 3,859,163) in view of Lidar (US 5,900,117). Haythornthwaite discloses a method of selectively cleaning a moving felt in a paper making machine based on sensed vacuum measurements that indicate the moisture content of the felt and the condition of the felt at various locations. The system of sliding members described above for varying the region of vacuum reads on the elements of claims 14-19, and the apparatus as described above reads on claims 34-39, except that no disclosure of using a ceramic material for the main body and metal for the sliding members is given. However, the claims are unpatentable, because the selection of a known material based on its suitability for the intended use is within the skill of a routineer in the art, *In re Leshin*, 125 USPQ 416 (CCPA 1960). Further evidence of this is given by Lidar, who discloses an apparatus for widthwise cleaning of a papermachine clothing, whereby the apparatus can be made of metal or ceramic (column 2, lines 37-38).

Regarding claims 31 and 32, Haythornthwaite makes no mention of taking measurements after the press nip in a press section. However, since the invention of Haythornthwaite is directed to paper machine felts, at the time of the invention it would be obvious to one skilled in the art that "felts" mean "press felts", and cleaning of the felt would

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take place at a point in the felt loop after the web has been removed from the felt, which would be at some point after the press nip. One of ordinary skill in the art knows something about the art apart from what the references alone teach, *In re Bode*, 193 USPQ 12, 16 (CCPA 1977), and with respect to Haythornthwaite one would know the definition of a felt and know where to clean a felt.

Allowable Subject Matter

Claims 22 and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not disclose or suggest a process for conditioning a circulating felt belt of a web producing machine by providing zonal measuring of felt conditions and zonal conditioning based on the measured conditions, and further having means for diluting the conditioning medium outside of the machine adjusted as needed for each zone.

The prior art also does not disclose or suggest a process for conditioning a circulating felt belt of a web producing machine by providing zonal measuring of felt conditions and zonal conditioning based on the measured conditions, and further whereby the amount of conditioning medium applied is based on the lag time of the transversing application unit.

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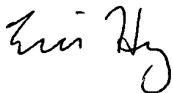
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Macierewicz (US 5,595,632) discloses a shower for a felt in a paper machine having independently controlled shower nozzles and valves disposed across the width of the felt. The arrangement provides for selective zonal cleaning of streaks that may develop on the felt during operation.

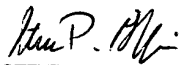
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Hug whose telephone number is 703 308-1980. The examiner can normally be reached on Monday through Friday, 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 703 308-1164. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872-9310 for regular communications and 703 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-0651.



jeh
April 1, 2003


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